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[TITLE OF INVENTION]

NEW SPONGE-LIKE MACROPOROUS GELATIN MICROCARRIER AND ITS PREPARATION

[ABSTRACT]

A process for preparing sponge-like macroporous gelatin microcarrier (I) comprises: (a) mixing gelatin solution with forming agent, e.g., $NaHCO_3$ or $CaCO_3$ (The particle size is 20-30 μm or less), and adding the mixed solution of chloroform (II) and toluene (III) containing 1-4 % surfactant (mixing ration of (II):(III) is 3:7); (b) agitating the mixture at 300-1000 rpm to form emulsion; (c) filtering it with 100 μm sieve and washing with D.W.; (d) cross-linking with glutaraldehyde, and drying to obtain the final product. The diameter of (I) is 150-500 μm and pore size of (I) is 20-50 μm.

[Claims]

[Claim 1] A sponge-like macroporous gelatin microcarrier, which has the following properties:

a) shape: sphere;
b) diameter of the microcarrier: 150-500 μm;
c) diameter of the pore size: 20-50 μm;
d) specific gravity: 1.2-1.6;
e) surface area: 7-10 m^2/g;
f) being optically transparent;
g) being degradable by the enzyme, such as collagenase, dispase, etc.;
h) in the form of powder or solution, which is sterilizable.

[DETAILED DESCRIPTION]

The present invention relates to a new sponge-like macroporous microcarrier and a process for the preparation thereof, which is used for cell culture.

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The present invention can adjust the macroporous microcarrier to have a pore diameter of 20 to 50 μm by controlling the size and properties of the foam. The invention can also adjust a mechanical strength in accordance with the extent of the reaction to be crosslinked. In particular, since the surface area of the present microcarrier is much broader than that of the conventional microcarrier and the interior of the carrier is consist of sponge-like pore tissues, there are provided environment very similar to actual tissues. Further, since the cells are protected from the culture environments such as a shear stress, etc., the cell concentration using 5g/l of macroporous microcarrier becomes four to five times higher than that using the conventional microcarrier. Moreover, a new sponge-like macroporous microcarrier according to the present invention can be used to culture the floating animal cells such as a hybridoma cell, as well as the adhesive animal cells.

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